



# UNITED STATES PATENT AND TRADEMARK OFFICE

9/21  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,424	11/02/2001	Johan Agus Darmawan	020303-007200US	4303
7590	09/16/2004		EXAMINER	
Henry K. Woodward Beyer Weaver & Thomas LLP 590 West El Camino Real Mountain View, CA 94040				TRAN, TAN N
		ART UNIT	PAPER NUMBER	2826

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

10/053,424

**Applicant(s)**

DARMAWAN, JOHAN AGUS

**Examiner**

TAN N TRAN

**Art Unit**

2826

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on response filed on 08/18/04.

2a) This action is **FINAL**.                                   2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 15 and 21-23 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 15,21-23 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \*    c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15,21-23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (6,483,147) (of record) in view of Buynoski et al. (6,190,985).

With regard to claim 15, Lin disclose a SOI substrate 40 having a silicon substrate 12, a silicon oxide layer 34 formed on the substrate 12, and a silicon device layer 32 overlying the silicon oxide layer 34; a semiconductor component MOSFET 42 formed in the silicon device layer 32 overlying the conductive plug 38, that is formed in a portion of the substrate 12, a metal layer (50,52) in the portion of the substrate 12 in which silicon has been removed by etching, the metal layer (50,52) abutting the silicon oxide layer 34 and providing heat removed from the semiconductor component 42. (Note lines 12-15, column 6, lines 5-10, column 1; lines 2-20, column 3; lines 28-43, column 5, figs. 7 and 8 of Lin).

Lin does not disclose the silicon oxide layer electrically insulating the metal layer from the semiconductor component.

However, Buynoski et al. discloses the silicon oxide layer 34 electrically insulating the metal layer 38 from the semiconductor component 32. (Note lines 37,38, column 4, fig. 6 of Buynoski et al.).

Therefore, it would have been obvious to one of ordinary skill in the art to form the Lin's device having the silicon oxide layer electrically insulating the metal layer from the semiconductor component such as taught by Buynoski et al. in order to remove heat from the component.

With regard to claims 21-23, Lin discloses the metal layer 52 comprises gold or copper or aluminum and a refractory metal 50 such as titanium nitride. (Note lines 64-67 in column 3 and lines 1-9, column 4, figs.7,8 of Lin).

### **Response to Arguments**

2. Applicant's arguments filed 08/18/04 have been fully considered but they are not persuasive.

It is argued, at pages 2,3 of the remarks, that "The plug 38 of Buynoski does not abut the silicon oxide layer 34" or "In Buynoski, plug 38 does not abut the silicon oxide layer". However, figs. 7 and 8 of Lin do show metal layer (50,52) abutting the silicon oxide layer 34. Thus, Applicant's claims 15,21-23 do not distinguish over Lin and Buynoski et al. references.

### **Conclusion**

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

4. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tan Tran whose telephone number is (571) 272-1923. The examiner can normally be reached on M-F 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

TT

Sep 2004

*Minhloan Tran*  
Minhloan Tran  
Primary Examiner  
Art Unit 2826